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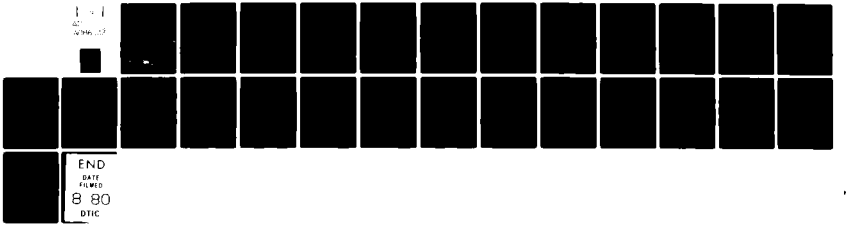

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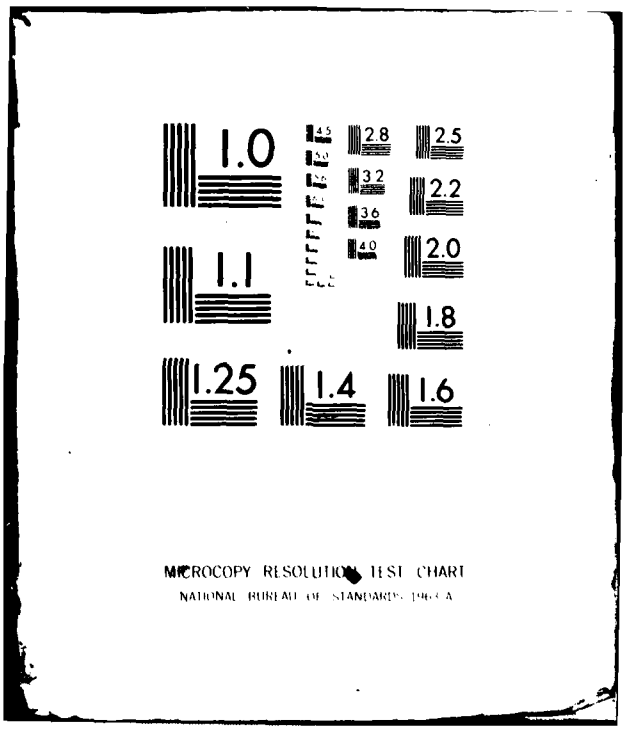
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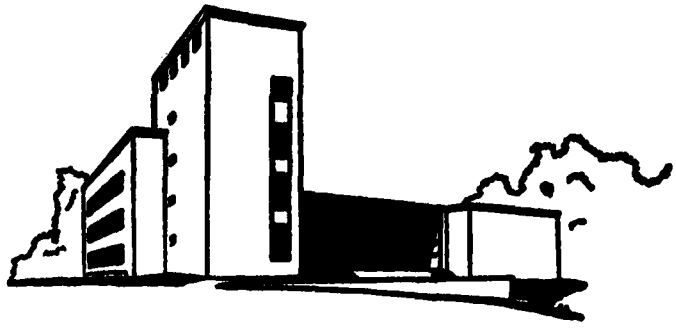

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Quality of Work Projects in the 1980's*

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This paper first examines factors that affect the long run viability of Quality of Working Life projects. Then it proposes some alternative structures for Quality of Working Life projects in the 1980's.

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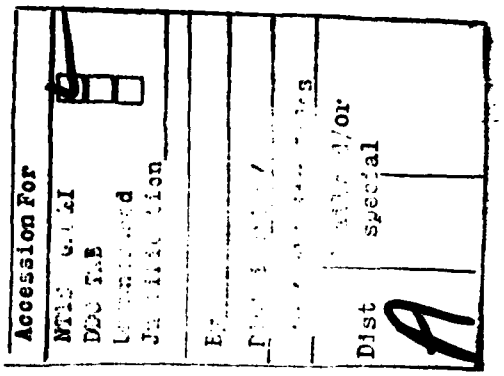

Introduction

Since the early 1970's there has been a proliferation of quality of working life (QWL) projects. These projects attempt to bring about fundamental changes in organizational and labor-management relationships. Basically, they illustrate new ways to restructure work in order to improve the organizational effectiveness. This paper reviews QWL efforts in the 1970's and suggests possible characteristics of QWL projects in the 1980's.

Definitional Characteristics

No single definition of QWL projects has been accepted by managers or union leaders. In this paper, QWL projects are distinguished by two definitional characteristics: they attempt to restructure multiple dimensions of the organization and to institute a mechanism which introduces and sustains change over time.

Restructuring multiple dimensions of the organization means that the change effort attempts to change the organization as a total system rather than to change any one of its parts. Change, then, is directed at the authority, decision-making, reward, communication, technology, selection, and training dimensions within an organization rather than at any one dimension. Therefore, a new program of job enrichment or supervisory training does not fit our definition, because only programs that change multiple dimensions in an organization are defined as QWL

projects. The focus of the multidimensional change is generally to provide greater democratization of the work place, greater control for the worker over his or her environment, and greater joint labor and management problem solving.

The mechanism (or organizational unit) to introduce and to sustain change is the second characteristic of QWL projects. This means that a mechanism internal to the organization is created to diagnose organizational problems, introduce changes, monitor the changes, and make adjustments. The purpose of this mechanism is to institutionalize the process of change.

QWL project goals vary for different organizational settings. In general, improvements in economic indicators (e.g., productivity), psychological indicators (e.g., improved work satisfaction, the ability to grow and develop new skills) and labor-management indicators characterize most projects.

Model QWL Project Characteristics

QWL projects have taken many different forms. Some occur in a union setting; others in non-union plants. Some occur in existing organizations, others have begun in brand new plants. More of QWL efforts in existing plants occur in a union setting; more of the new plant projects are non-union.

Motivations to undertake a program have varied from attempting to resolve an economic crisis to avoiding unionization to ideological reasons of democratizing the work place. The specific organizational changes have included major modifications in decision-making practices

(e.g., workers are more involved), communication networks, training methods, reward systems, and changes with scheduling.

An Example QWL Project

One way to sharpen our conception of QWL project is to briefly outline a well-publicized project -- the Rushton Mining Experiment. (Goodman, 1979). Rushton is a coal mine located in north-central Pennsylvania. In 1973, the presidents of Rushton and of the United Mine Workers of America agreed to jointly sponsor a QWL project. A labor-management committee, with an external research team, was set up to design and monitor the QWL project. Funds from the federal government provided initial support for the research team. The Ford Foundation sponsored an independent evaluation of the project. The initial design was for an 18 month program.

The change program developed by the research team and labor-management committee had eleven major characteristics.

1) Goals. Safety, increased productivity, higher earnings, greater job skills, and job satisfactions were the five major goals.

2) Focal Unit. The major unit of analysis was the mining section. Miner performance was evaluated on a section, rather than crew, basis to increase cooperation and decrease competition between crews.

3) Autonomous Work Groups. Responsibility for daily production and direction of the work force was delegated to the crew.

4) Foreman. The foreman was no longer responsible for production - these responsibilities were delegated to the crew members. Safety became the foreman's primary responsibility. He was also to become more involved in planning activities and integrating the section with the rest of the mine.

5) Job Switching. All men were expected to exchange positions and learn other jobs within their crew so that the crew would be multi-skilled. That is, the crew would develop the flexibility to be able to staff any job. Movement between jobs did not require bidding as it would under the regular contract.

6) Pay. All members of the experimental section received the same rate; it was the top rate for the crew. The rationale for the same pay and high rate was that all men in the crew assumed equal responsibility for production and maintenance of equipment. Also, the crew members agreed to perform multiple skills.

7) Additional Crew Members. The traditional crew consisted of six production men. In the experimental section two support men (who lay track and transport supplies) were added to the crew. These two support men were traditionally drawn from the general labor force and assigned to a section only when support work was needed.

8) Joint Committee. A smaller labor-management committee (5 union and 5 management) was instituted 75 days after the experiment began to supervise the daily operation of the program. The larger labor-management group which initiated the project remained intact, but dealt with broader policy issues.

9) Grievances. Grievances were not initially processed through the traditional grievance machinery. The expectation was that grievances would be resolved within the experimental section. If not, they were to be brought to the joint committee. Failure to resolve the grievance at the joint-committee level would lead to the use of the traditional grievance machinery.

10) Training. A major part of the change effort was to train the miners to be professional miners. A training program on safety, legal practices, ventilation, roof control, and other matters was a major part of the change effort.

11) Allocations of Gains. No gain-sharing plan was worked out in the initial agreement. Rather, these general principles were established: If no gains resulted, the company would assume all the costs from the experiment. If gains occurred, the company would be reimbursed, and the remaining gains would be allocated between labor and management.

Summary of Example QWL Project

The initial plan for change is significant because it represents a contract between labor and management outside the existing union-management contract. Also, both union and management gave up rights they previously enjoyed (for example, certain rights over job bidding procedures or rights to direct the work force). Finally, the changes discussed above represent a major alteration in how work was conducted at Rushton.

The Bottom Line

What were the results of the 1970's QWL projects? Let's answer that question by examining results reported in the first three or four years, and then examining any followup studies after that period. In the Rushton case, there were slight productivity improvements, positive shifts in attitudes and improvements in safety practices, worker skills and knowledge over a three-year period. While it is difficult to accurately summarize the total QWL picture in the United States, it

appears that:

1. Most QWL projects seem to result in increases in job satisfaction, feelings of personal growth, job involvement and organizational commitment.

2. Absenteeism, turnover, and tardiness are strongly and positively affected in most QWL projects. This finding agrees with the increased worker satisfaction.

3. Mixed results exist with respect to productivity. Productivity increases in about half of the QWL experiments, while it remains the same in the other half.

4. Most projects create more skilled and flexible work forces. The result is that the organizations end up with more valuable human resources (Goodman and Lawler, 1977).

The picture we draw from these findings identifies modest gains from QWL efforts in the first three or four years.

Another way to view the bottom line is to examine the functioning of these programs five or six years after their inception. Recently, I conducted a study of QWL projects which had been in operation for at least five years. Basically, I wanted to see if the projects were functioning or had remained institutionalized. The general finding was that at least 75% of the projects were <u>no longer</u> functioning; none of the programs in unionized settings were still in operation. These findings seem similar to other research in this area (Walton, 1975).

To review, I cite these two basic findings:

1. The QWL projects initially experienced a modest amount of success.

2. Over time (e.g., 5 years) many of the projects were no longer operational.

These two findings are not surprising if you review the historical and intellectual content of the projects. Most of these projects were experimental in nature. By definition, the projects were explorations into uncharted areas. Organizational theory is not that well developed to provide clear guidance in these experimental projects. Also, few, if any, organizational interventions in the early 1970's matched the scope of the change attempted in the QWL efforts. That is, there were no practical examples to build on. Given this context, it is not surprising that we did not experience a greater success rate.

Factors Affecting the Long Run Viability of QWL Projects

The 1970's represented a time when labor and management jointly designed some significant alternative arrangements for restructuring work. Many of these efforts, although initially successful, have not persisted over time even though the parties wanted to create long-term arrangements. Why these programs did not persist over time may provide some insights into opportunities for the 1980's. (See Goodman, Conlon and Bazerman, 1977, for a more detailed discussion). We can identify ten reasons why QWL did not remain in effect over time.

1. Sponsorship. Many QWL projects had a internal sponsor. When this sponsor left the organization or changed the focus of his commitment, the viability of the project decreased.

2. Transmission. Most of the projects did not account for the influx of new workers. When a project began the workers were thoroughly trained in QWL principles. However, once a program was in operation,

mechanisms to socialize new members in QWL behavior were not introduced.

3. Feedback. Many of the projects did not have good feedback mechanisms to identify whether QWL behaviors were being performed or to provide current information on the results of QWL actions.

4. Diffusion. Many of the QWL projects were started in parts of organizations. Little attempt was made early in the project to facilitate diffusion of QWL programs to other parts of the organization. Conflicts between QWL and non-QWL parts of the organization developed; the conflicts hurt the long-run viability of the project.

5. Unbounded Mandate. Many of the projects were unbounded. That is, labor and management had an open or unbounded contract to improve the effectiveness of the organization. The ambiguity of the mandate led to difficulties in assessing the direction or results of QWL efforts and contributed to tensions between labor and management.

6. Congruency Between Existing Values and Proposed QWL Values. Underlying most projects are values concerning giving workers more control, more responsibility, and more autonomy over their work place. In many cases these values were in conflict with the modal values of the organization. Although a sponsor may initially promote the QWL effort, the conflicts in values work against long-run QWL effectiveness.

7. Total System Commitment. Since QWL efforts bring about total system change, it is necessary for the total organization to endorse the program. In many of the QWL efforts there was commitment at the top of the company and union but not throughout the relevant membership.

8. Long-Run Reward Systems. Long-run viability of QWL projects were to some extent dependent on the availability of attractive rewards.

Many QWL projects created rewards that were initially attractive (greater responsibility), but the relative attractiveness of these rewards seemed to decline over time.

9. Organizational Environment. A benign organizational environment seems necessary for any long-term persistence of QWL efforts. In situations of sudden changes in demand, costs or products, economic forces within the organization became dominant and decreased focus on QWL activities.

10. Structure of Union-Management Relations. A basic difficulty with many QWL projects is that the structure project creates problems within the union which affect the project's long-run viability. This inherent conflict appears in four areas: First, most QWL efforts are introduced into one part of the organization so that some organizational members share benefits not received by others. Conflict then occurs among the union members. A second type of conflict appears among local union leaders and members. QWL efforts can lead to substantial increases in local union leader-management interaction. This higher level of association can lead to union members feeling suspicious about their local leaders. The third level of conflict occurs between the QWL orientation, which calls for cooperative behavior and adversary orientation, which characterizes traditional collective bargaining behaviors. Conflict between the cooperative and adversary mode appeared in many QWL efforts; the consequences of this interface can have both positive and negative effects. Improved problem solving behavior in QWL can facilitate problem solving in the collective bargaining arena. Conflicts over collective bargaining issues (e.g., handling of grievances) can spill over and inhibit QWL activities.

The critical point is that the potential conflict between cooperative mode of QWL and the adversary mode of traditional collective bargaining can limit the viability of the QWL effort. The fourth level of conflict can appear between the local and international. Most of the activity in the work restructuring projects has occurred at the local level, while approval for the experiment has generally come from the international. As experimentation occurs at the local level under a sheltered agreement, new forms of labor-management relationships are developed. Some of these new arrangements may be outside the current labor-management mandate. In this situation an interesting political dilemma occurs. On one hand, at the local level, union and management have a mandate to innovate. On the other hand, and especially if the new labor-management arrangements are considered far beyond boundaries which could be incorporated in a future collective bargaining agreement, the international may only view the local QWL project as experimental and temporary. Without long-run legitimation the local project is unlikely to survive. This can result in conflict between the local and international if the local wants the project to continue.

Quality of Working Life Projects in the 1980's

In this paper we have identified three important phenomena: First, in the 1970's, QWL efforts represented a new form of labor-management cooperation designed to change the fundamental nature of the work place. Second, the initial effect of these programs has generally been positive across a variety of organizational effectiveness indicators. Third, many of the programs do not seem to have long-run viability; after five or six years many of the QWL programs are not functioning. These phenomena will shape the future QWL experiments.

Interest in QWL

Will there be growing or declining interest in QWL efforts? While we do not have any models to make systematic predictions, it is likely the projects will be on the decline. Several factors point to decreasing emphasis on future QWL experiments:

1. The major government financial support for QWL which characterized the early 1970's has decreased.

2. There has been no major development in QWL centers which served as catalysts for getting projects underway.

3. While many organizations have initiated QWL projects, we do not find a consistent diffusion of QWL projects after the initial effort.

4. There has been no major growth in union interest in QWL effort. Some internationals (e.g., UAW) have supported these programs from the beginning, but the labor movement has not embraced QWL efforts.

5. The national media has not emphasized QWL developments.

The Structure of New QWL Projects

While there may not be a proliferation of QWL efforts in the 1980's, new forms of work organization designed by labor and management will continue. QWL programs did have positive effects, but these effects were not sustained over time. Because of their experimental nature it is not surprising that the long-run success rate was not more favorable. Given the experience of the 1970's, what factors should shape the design of QWL efforts in the 1980's?

1. Specific versus Unbounded Programs. The QWL efforts in the future should have a specific focus both in content and time. That is, they should focus on improvement of a specific area (e.g., safety,

absenteeism, alcoholism) rather than general objectives such as improving the quality of working life. The area selected should be important to both management and labor; it should also be manageable and measurable. In past QWL projects, labor and management efforts were spread over a wide area. Also, a specific time table for completing goals (e.g., reducing lost-time accidents) should be specified.

2. Amount of Change Advocated. Many of the QWL changes advocated in the 1970's were at substantial variance with the organizational structure and value system. Prior to an intervention the organization (e.g., Rushton) was characterized by traditional lines of authority and division of work. After the change, there were substantial modifications in the authority, responsibility and the nature of work. Since these more radical changes existed in an operational unit of the larger, traditional organization, tension and conflict developed which worked against the QWL effort. The proposal, then, is not to introduce any radical changes but to develop an evolutionary system which slowly changes parts of the existing traditional system to the QWL ideal. As change is introduced and accepted, the larger organizational unit begins to assimilate the new structure and values and the stage is set for the next period of change. If our hypothesis for slow evolutionary change is correct, then we will modify our time table for QWL efforts. In the 1970's, eighteen-month or two-year programs were common. In the 1980's, we should plan for a five to ten-year time frame.

3. Stable Leadership Environment. While no organizational environment is without change, it would be preferable to set up QWL in areas where the principal union and management leaders (i.e., power centers) are in place over a predictable period of time. Basically, we want to minimize

the effect of changing sponsors. This factor will limit the population for QWL efforts.

4. Total System Commitment. It has been said before that QWL effort will not persist unless there is commitment throughout the organization. The word "organization" in this context means both the union and company. For the union it means the international, regional, and local levels. In the past, initiators of QWL projects secured commitment at some organizational levels, hoping others in the organization would fall in line. This did not happen and the projects failed over time. The critical implication is that QWL efforts need to be considered more in a phase-development process. The first phase needs to be a commitment-development activity where key organizational participants pledge support for the QWL project. If the first phase is not successfully completed, the project should be terminated. This commitment process must occur in the union and company before initiation of QWL design plans.

5. Target of Change. Most of the QWL changes in the 1970's focused on lower-level organizational participants - white or blue collar. Little effort was devoted to changing the organization of management or professional personnel. It is not clear why the target of change should be the production or clerical work force. A corollary of gaining total system commitment may be to introduce QWL at multiple organizational levels. The change should be instituted not simply within the focal organization but also within the union as an organization.

6. Long-Run Reward Systems. Many of the QWL projects in the 1970's were built around short-term reward systems. People were given greater

opportunities for participation, autonomy, and responsibility, which, in most cases, had positive effects. Over time the attractiveness of these rewards waned, as did the projects. Two things seem particularly important in designing a long-run reward system. First, regardless of the attractiveness of intrinsic rewards, there should be a financial plan connected with QWL behaviors that functions over time. (Programs that have relied solely on intrinsic rewards have not been successful). Second, there should be a mechanism which revises and modifies QWL reward systems. It is unlikely that anyone can design a set of reward systems at the beginning of the project that will remain powerful over time. There should be a mechanism that senses, for example, when opportunities for participation are declining in attractiveness and designs new reward opportunities. Implicit in the discussion of long-run reward systems is the assumption that the structure of the particular organization in question permits the design of such systems.

Conclusion

The QWL projects of the 1970's represent attempts to find alternative forms of work organizations. These projects have the potential to improve the well-being of the workers, the character of labor-management relations, and the economic efficiency of the firm. Given their experimental nature, it is fair to say many projects experienced initial success. Over time the success rate has been less optimistic. Some of the factors contributing to this lack of persistence have been discussed.

QWL projects will be initiated in the 1980's, although at a slower rate than during the past decade. More projects will be initiated in non-union settings. The reason for the greater selection of non-union

settings is that there may be structural conflicts between traditional collective-bargaining arrangements and the QWL arrangements. Projects initiated successfully in a union setting will require total system commitment throughout all levels of the union and focal organization, a stable leadership environment, and a willingness to introduce change in the union organization, as well as in the focal organization. In addition to these changes, QWL projects in the 1980's need to be limited in focus and in the amount of change advocated. Future QWL should be designed as evolutionary systems taking longer periods of time, and designed with mechanisms to create viable long-term reward systems.

References

Goodman, P.S. Assessing organizational change: The Rushton quality of work experiment. New York: Wiley-Interscience, 1979.

Walton, R.E. The diffusion of new work structures: Explaining why success didn't take. Organizational Dynamics, Winter 1975, pp. 3-21.

Goodman, P.S., & Lawler, E.E. New forms of work organization in the United States. Monograph prepared for the International Labor Organization, Geneva, Switzerland, 1977.

Goodman, P.S., Conlon, E., and Bazerman, M. Institutionalization of planned organizational change. In Staw, B.M., and Cummings, L.L. (Eds.), Research in Organizational Behavior (Vol. II). Greenwich, CT: JAI Press, 1979.

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